

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

- 1 1. (Withdrawn) A method for identifying genes which are up- or down-
2 regulated in intestinal tissue of patients who have, or are at risk of developing, an inflammatory
3 bowel disease or disorder, comprising:
 - 4 (i) generating a first library of nucleic acid probes representative of genes
5 expressed by intestinal tissue of an animal without apparent symptoms and/or risk for an
6 inflammatory bowel disease or disorder;
 - 7 (ii) generating a second library of nucleic acid probes representative of genes
8 expressed by intestinal tissue of an animal which has symptoms of, and/or is at risk for
9 developing, an inflammatory bowel disease or disorder; and
 - 10 (iii) identifying genes that up- or down-regulated, e.g., by at least a predetermined
11 fold difference, in the second library of nucleic acids relative to the first library of nucleic acids.
- 1 2. (Withdrawn) The method of claim 1, including the further step of cloning
2 those genes which are up- or down-regulated.
- 1 3. (Withdrawn) The method of claim 1, including the further step of
2 generating nucleic acid probes for detecting the level of expression of those genes which are up-
3 or down-regulated.
- 1 4. (Withdrawn) The method of claim 1, including the further step of
2 providing kits, such as microarrays, including probes for detecting the level of expression of
3 those genes which are up- or down-regulated.
- 1 5. (Withdrawn) A method for determining the phenotype of a cell,
2 particularly a cell of intestinal origin, comprising detecting the differential expression, relative to

3 a normal cell, of at least one gene shown in Table 1 (herein the "IBD gene set"), or other IBD
4 genes identified according to the method of claim 1.

1 6. (Withdrawn) The method of claim 5, wherein the assay detects a
2 difference in the level of expression of an IBD gene of at least a factor of two.

1 7. (Withdrawn) The method of claim 5, which is used to assess a patient's
2 risk of having, or developing, an inflammatory bowel disease.

1 8. (Withdrawn) A kit for assessing a patient's risk of having or developing
2 an inflammatory bowel disease, comprising

3 (i) detection means for detecting the differential expression, relative to a normal
4 cell, of at least five genes shown in Table 1 (herein the "IBD gene set") or the gene products
5 thereof; and

6 (ii) instructions for correlating the differential expression of IBD genes or gene
7 products, if any, with a patient's risk of having or developing an inflammatory bowel disease.

1 9. (Withdrawn) The kit of claim 8, wherein the detection means includes
2 nucleic acid probes for detecting the level of mRNA of the IBD genes.

1 10. (Withdrawn) The kit of claim 8, wherein the detection means includes
2 nucleic acid probes for detecting the presence of mutations or changes in methylation patterns to
3 genomic sequences encoding the IBD genes.

1 11. (Withdrawn) The kit of claim 8, wherein the detection means includes an
2 immunoassay for detecting the level of IBD gene products.

1 12. (Withdrawn) A method of doing a business for assessing a patient's risk
2 of having or developing an inflammatory bowel disease, comprising

3 (i) providing a service for determining the level of expression of an IBD gene set
4 or gene products thereof, and comparing the level of expression to a normal cell; and

5 (ii) assessing a patient's risk of having or developing an inflammatory bowel
6 disease, if any, by determining the correlation between the differential expression of IBD genes
7 or gene products with known changes in expression of IBD genes measured in other patients'
8 suffering from an inflammatory bowel disease.

1 13. (Withdrawn) A method for treating a patient who has developed, or is at
2 risk of developing, an inflammatory bowel disease comprising:

3 (i) detecting the differential expression, relative to a normal cell, of at least one
4 IBD gene;

5 (ii) proscribing a course of treatment dependent on the level of expression of the
6 IBD gene(s) relative to normal cells.

1 14. (Canceled)

1 15. (Canceled)

1 16. (Withdrawn) A drug screening assay comprising

2 (i) administering a test compound to an animal having an inflammatory bowel
3 disease, or a cell composition isolated therefrom;

4 (ii) comparing the level of IBD gene expression in the presence of the test
5 compound with one or both of the level of IBD gene expression in the absence of the test
6 compound or in normal cells; wherein test compounds which cause the level of expression of one
7 or more IBD genes to approach normal are candidates for drugs to treat inflammatory bowel
8 diseases.

1 17. (Withdrawn) A method for treating an animal having an inflammatory
2 bowel disease comprising administering a compound identified by the assay of claim 16.

1 18. (Withdrawn) A pharmaceutical preparation for treating an animal having
2 an inflammatory bowel disease comprising a compound identified by the assay of claim 16 and a
3 pharmaceutically acceptable excipient.

1 19-26. (Canceled)

1 27. (New) An array for diagnosing inflammatory bowel disease (IBD) in a
2 subject comprising:

3 (a) nucleic acid probes for determining an expression level of at least one gene
4 product in a sample from said subject, wherein said gene product is an mRNA of a gene selected
5 from the group consisting of macrophage inflammatory protein-2 β (GRO3), neutrophil lipocalin
6 (HNL), elastase specific inhibitor (elafin), and type VI collagen α 3 chain (COL6A3); and

7 (b) a substrate to which said nucleic acid probes are bound,
8 wherein a difference in the expression level of said gene product in said subject compared to an
9 expression level of said gene product in a healthy subject indicates that said subject has IBD or is
10 at risk of developing IBD.

1 28. (New) The array of claim 27, wherein said IBD is ulcerative colitis (UC).

1 29. (New) The array of claim 27, wherein said IBD is Crohn's disease (CD).

1 30. (New) The array of claim 27, wherein said array distinguishes between
2 UC and CD.

1 31. (New) The array of claim 27, wherein the expression level of said gene
2 product differs by at least a factor of two.

1 32. (New) The array of claim 27, wherein said sample is a needle biopsy core,
2 a surgical resection sample, a bowel sample, lymph node tissue, or serum.

1 33. (New) The array of claim 27, wherein said nucleic acid probes
2 specifically hybridize to said gene product.

1 34. (New) The array of claim 27, wherein said nucleic acid probes are bound
2 to said substrate by covalent bonds or hydrophobic interactions.

1 **35.** (New) The array of claim **27**, wherein said nucleic acid probes are spotted
2 onto said substrate in a two-dimensional matrix or array.

1 **36.** (New) The array of claim **27**, wherein said substrate is selected from the
2 group consisting of paper, membranes, filters, chips, pins, and glass.